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Kai Tuschner

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EXAMINER

BASEHOAR, ADAM L

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/057,126	Applicant(s) TUSCHNER ET AL.	
	Examiner ADAM L. BASEHOAR	Art Unit 2178	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12 and 14-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12 and 14-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the Amendment filed 08/12/09.
2. Claims 1-3, 5-12, and 14-29 are pending in this case. Claims 1, 10, 19, 23, and 27 are independent claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 5-12, and 14-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aptus et al. (US-7,114,149 09/26/06) in view of Dori (US-7,099,809 08/29/06) in further Kodosky et al (US-6,961,686 11/01/05).

-In regard to substantially similar independent claims 1, 10, 19, 23, and 27, Aptus teaches a method, system, means, and program product for generating source code from a block diagram model using a code compiler (column 5, lines 55-67: "modifications made on the displays 204....all modifications are made directly to the source code...change is made to the source code via the graphical representation"; column 17, lines 56-58: "used to develop source code in a project"; column 18, lines 56-60) the simulatable block diagram model represented in source model language (column 2, lines 20-38: "the well-known Unified Modeling Language (UML) is a general-purpose notation language for visualizing, specifying, constructing, and documenting complex software systems"; column 18, lines 50-67: "the graphical representation

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of the project may be in Unified Modeling Language...other graphical representations of the source code may be displayed”);

a processor and memory (column 6, lines 34-45: "processor...memory")(Fig. 6);

wherein one or more comments that include a block path identifying a section of the source model language that corresponds an element in the block diagram model are included in the generated source code (column 21, lines 65-67; column 22, lines 1-13 & 46-60: “includes a reproduction of comments inserted into the source code”; column 23, lines 3-35: “the ‘see’ parameter”)(Figs. 20, 24, & 25);

generating a code generation report (e.g. Fig. 2: 206 & Fig. 20: 2008) from the generated source code using a report compiler (column 22, lines 46-64), the generating of the code generation report comprising (column 5, lines 46-62; column 21, lines 65-67; column 22, lines 1-13 & 46-51):

parsing, using the report compiler, the one or more comments in the generated source code (column 22, lines 46-67: “generates the textual portion of the HTML documentation...by parsing the source code and comments in the source code”; column 23, lines 1-35: “comments”);

identifying, using the report compiler, the block path in the one or more comments (column 22, lines 52-67; column 23, lines 1-35), and

displaying the code generation report (column 5, lines 46-62: “source code is being displayed in both a graphical form and a textual form”; column 21, lines 1-10 & 34-43: “viewing and navigation through the documentation...HTML documentation is begin displayed by a web browser”)(Fig. 20).

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Aptus further teaches converting, using the report compiler, the generated source code into the code generation report by replacing the block path (column 22, lines 52-67; column 23, lines 1-35) with hypertext links that refers to the element of the block diagram model that corresponds to the section of the source modeling language identified by the block path (column 21, lines 26-34: "HTML documentation...diagrammatic and textual documentation...navigating between the two"), generating links between the HTML diagrammatic and the textual portions of the documentation to facilitate navigation through and viewing of the documentation (column 3, lines 31-39; column 21, lines 26-33). To accomplish this, Aptus teaches generating and mapping HTML hyperlinks in the diagram model to associated portions in the textual description (column 23, lines 34-67; column 24, lines 1-30)(Fig. 21: 2112). Aptus also teaches utilizing the 'see' comment parameter in the HTML documentation to link to associated block elements (column 23, lines 25-35)(Fig. 25: i.e. note that the See Also: "My Thread" element is underlined in the HTML document to imply hyperlink navigation to one of ordinary skill in the art). However, Aptus does not specifically recite replacing the reference to the element with a hypertext link that refers to the element of the block diagram model identified by the reference, wherein the hyperlinks were in the textual description and by selecting the hyperlink the corresponding associated block diagram model, representing the source model language, element was displayed. Aptus also does not specifically teach wherein block diagram model was simulatable. Dori teaches a simulatable block diagram model (column 2, lines 3-6: "provide a visual simulation of a modeled system"; column 21, lines 22-column 22, lines 33: "tool can use the generic process model of Fig. 36 to provide animated simulations of a modeled system...verify design intents and program logic"). Dori also teaches maintaining an equivalence between a

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diagram model represented in a source modeling language (column 1, lines 21-28: "UML"; column 3, lines 1-14: "modeling tool... 'DiagraMaker'") and a textual description for said diagram model (column 3, lines 3-67: "maintain the equivalence": column 4, lines 1-4)(Fig. 1: 102 & 104), wherein the diagram model and textual description are linked in such a way that when a user selects a textual portion with a cursor, the corresponding referenced element in the diagram model, representing the source model language, is highlighted and displayed (column 4, 8-14: "highlight graphic constructs corresponding to the sentence...and vice-versa"). It would have been obvious to one of ordinary skill in the art at the time of the invention for the user of Aptus to have been able to select a hyperlink in the textual description and have been shown the corresponding diagram model element as shown in Dori, because Dori teaches that by providing said bi-directional linking functionality the user of Aptus would gain the benefit of a "better understanding of the correspondence between graphics and text" (column 4, lines 10-14). It also would have been obvious to one of ordinary skill in the art at the time of the invention for the block diagram of Aptus to be simulatable, because Dori taught that by simulating the system represented by the block diagram model the user of Aptus would have been provided the benefit of being able to help verify the design intents and program logic of the system (column 2, lines 3-6: "provide a visual simulation of a modeled system"; column 21, lines 22-column 22, lines 33: "tool can use the generic process model of Fig. 36 to provide animated simulations of a modeled system...verify design intents and program logic").

Neither Aptus nor Dori specifically teach the simulatable block diagram model as a whole. Kodosky teaches generating linked source code from a simulatable block diagram model (column 2, lines 57-67: "user places on or manipulates icons in a block diagram model using a

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block diagram model editor to create...'program'; column 3, lines 28-48; column 4, lines 16-45; column 11, line 31-column 12, lines 1-64; column 34, line 64-column 35, line 9: "specifying block diagram model...generating software source code for the block diagram model...linking the software source code"). It would have been obvious to one of ordinary skill in the art at the time of the invention for the graphical representation of the source code of Aptus to have been a simulatable block diagram model as shown in Kodosky, because Kodosky taught that graphical block diagram models provided programmers the benefit of increased productivity, maximum flexibility, as well as providing the ability to create programs that operate directly in hardware for increased speed and efficiency (column 3, lines 29-65; column 4, lines 1-15).

-In regard to dependent claims 2, 11, and 28, Aptus teaches receiving input from a user representing a selection of the at least one hyperlink text (column 24, lines 4-29: "generates a hyperlink reference for rectangular area 2012 to the portion of the textual documentation that corresponds...user may navigate to the exact part...by moving the mouse arrow inside of rectangular box 2012 and left clicking"); and

displaying to the user at least a portion of the textual documentation including the element of the model associated with the hyperlink text (column 24, lines 4-29: "automatically navigates to and displays the corresponding portion of the HTML textual documentation in the frame displaying the textual documentation").

Aptus teaches linking between the diagrammatic and the textual portions of the documentation to facilitate navigation and view of the documentation (column 3, lines 29-39) by establishing hyperlinks in the diagram model to portions in the textual description (column 23,

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lines 34-67; column 24, lines 1-21)(Fig. 21: 2112). Aptus does not specifically teach wherein the hyperlinks were in the textual description and by selecting the hyperlink the corresponding associated block diagram model element was displayed. Dori teaches maintaining an equivalence between a diagram model and a textual description for said diagram model (column 3, lines 3-67: "maintain the equivalence": column 4, lines 1-4)(Fig. 1: 102 & 104), wherein the diagram model and textual description are linked in such a way that when a user selects a textual portion with a cursor, the corresponding element in the diagram model is highlighted and displayed (column 4, 8-14: "highlight graphic constructs corresponding to the sentence...and vice-versa"). It would have been obvious to one of ordinary skill in the art at the time of the invention for the user of Aptus to have been able to select a hyperlink in the textual description and have been shown the corresponding diagram model element as shown in Dori, because Dori teaches that by providing said bi-directional linking functionality the user of Aptus would gain the benefit of a "better understanding of the correspondence between graphics and text" (column 4, lines 10-14).

-In regard to dependent claims 3 and 12, Aptus does not teach wherein displaying to the user at least a portion of the block diagram model comprises displaying the associated element in a highlighted fashion. Dori teaches maintaining an equivalence between a diagram model and a textual description for said diagram model (column 3, lines 3-67: "maintain the equivalence": column 4, lines 1-4)(Fig. 1: 102 & 104), wherein the diagram model and textual description are linked in such a way that when a user selects a textual portion with a cursor, the corresponding element in the diagram model is highlighted and displayed (column 4, 8-14:

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"highlight graphic constructs corresponding to the sentence...and vice-versa"). It would have been obvious to one of ordinary skill in the art at the time of the invention for the user of Aptus to have been able to select a hyperlink in the textual description and have been shown the corresponding diagram model element highlighted as shown in Dori, because Dori teaches that by providing said bi-directional linking functionality the user of Aptus would gain the benefit of a "better understanding of the correspondence between graphics and text" via the highlighting (column 4, lines 10-14).

-In regard to dependent claims 5 and 14, Aptus teaches parsing the generated source code (column 22, line 48: "parsing the source code") which could include a plurality of variables (column 8, line 55: "variables"; column 13: "local variables...several variables"; column 15)(Fig. 20: 2008) to generate HTML documentation (column 22, lines column 21, lines 65-67; column 22, lines 1-14 & 46-67; column 23, lines 1-35), wherein the HTML documentation contained hyperlinks between the HTML documentation and the associated block diagram model (column 21, lines 2-10; column 23, lines 34-67; column 24, lines 1-21)(Fig. 21: 2112) . Aptus does not specifically teach that parsing replaces a variable reference with a hypertext link to an associated element in the block diagram model. Dori teaches maintaining an equivalence between a diagram model and a textual description for said diagram model (column 3, lines 3-67: "maintain the equivalence": column 4, lines 1-4)(Fig. 1: 102 & 104), wherein the diagram model and textual description are linked in such a way that when a user selects a textual portion with a cursor, the corresponding element in the diagram model is highlighted and displayed (column 4, 8-14: "highlight graphic constructs corresponding to the sentence...and vice-versa"). It would

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have been obvious to one of ordinary skill in the art at the time of the invention for the user of Aptus to have been able to select a hyperlink in the textual description representing a variable reference and have been shown the corresponding diagram model element as shown in Dori, because Dori teaches that by providing said bi-directional linking functionality the user of Aptus would gain the benefit of a "better understanding of the correspondence between graphics and text" (column 4, lines 10-14). Additionally Aptus teaches wherein the parsing selected informative portions to be described in the textual documentation (column 23, lines 3-35), which would have been obvious to have included source code variable, because Aptus taught it would have thus enhanced to the reader of the source code how the variable was supposed to be used (column 13: "obtains information about how the variable is supposed to be used").

-In regard to dependent claims 6 and 15, Aptus teaches wherein the hypertext link is SGML (column 21, lines 2-24: "HTML to provide navigation links"; column 23, lines 52-67: "hyperlinks are a well-known feature of HTML"; column 24, 1-29: i.e. HTML was a notoriously well known application of SGML).

-In regard to dependent claims 7 and 16, Aptus teaches wherein the hypertext link is HTML (column 21, lines 2-24: "HTML to provide navigation links"; column 23, lines 52-67: "hyperlinks are a well-known feature of HTML"; column 24, 1-29).

-In regard to dependent claims 8 and 17, Aptus teaches wherein the hypertext link was HTML (column 21, lines 2-24: "HTML to provide navigation links"; column 23, lines 52-67:

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“hyperlinks are a well-known feature of HTML”; column 24, 1-29). Aptus does not specifically teach wherein the hyperlink was XML. It would have been obvious to one of ordinary skill in the art at the time of the invention for the document hyper-linking system of Aptus to have included an XML hyperlink, because it was notoriously well known in the art at the time of the invention that XML hyperlinks (i.e. XLinks) offer a far greater degree of functionality than those offered by HTML in that they were well known to offer extended links which provided multidirectional linking. Thus the user of Aptus would have been provided the benefit of multidirectional linking between the code generation report and the block diagram model (e.g. a functionality that was shown in the Dori reference (column 4, lines 8-15)).

-In regard to dependent claims 9, 18, and 29, Aptus teaches wherein the at least one comment listing a reference to a block comprises a character string identifying a path to file providing information relating to a section of the block (column 23, lines 1-35:

“comments...parameters are special fields within comments...‘see’ parameter is used to refer to other classes or class members that are related to or that should be referenced with regard to the class...associated with the ‘see’ parameter...referring to the ‘My Thread’ class”)(Figs. 20, 24, & 25).

-In regard to dependent claims 20-23, Aptus teaches wherein the storage medium could be a RAM, ROM, and a hard disk drive (column 6, lines 46-52: “hard disks...RAM or ROM”).

-In regard to dependent claims 24-26, Aptus teaches wherein the processor (Fig. 6: 608: “processor”) and the memory (Fig. 6: 602: “memory”) could be incorporated in a personal computer (column 6, lines 34-53: “data processing system 600”)(Fig. 6), network server capable of Internet communication (column 6, lines 34-53: “data processing system 600...Internet”)(Fig. 6). Aptus does not specifically teach wherein the data processing system (Fig. 6) was a single board computer. It would have been obvious to one of ordinary skill in the art at the time of the invention for the processing system of Aptus to have been a single board computer, because single board computers were notoriously well known in the art at the time of the invention to provide reduced weight and lower power consumption which thus increased the potential for portability of the processing system of Aptus. The user of a single board computer would thus provide predictable results to that of the data processing system as described in Aptus.

Response to Arguments

4. Applicant's arguments filed 08/12/09 have been fully considered but they are not persuasive.

-The Examiner has referenced Applicant's specification to determine the scope of the newly added term “block path” (Page 10, Lines 11-22), and has determined that the term appears to merely define a reference or identifier to a given object. Given its broadest reasonable interpretation, the block path of the claimed invention could be simply a name, reference, identification, or any other indicator of an object/element. As such the Aptus reference clearly teaches the concept of the claimed block path by associating corresponding portions of diagrammatic models and textual documentation based on the analysis of tokenized source code,

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which included keywords, operators, punctuation, names, comments, parameters, etc. In addition, the Examiner notes that hyperlinking two elements based on a block path is notoriously well known in the art. Aside from what is described above, the newly cited Horowitz and Lin references also clearly teach two different methods for automatically hyperlinking between two reports, documents, and/or elements based on identified terms, tags, elements, block paths, etc.

-In regard to the independent claim 1, the Applicant argues that neither Aptus, Dori, nor Kodosky teach or suggest that the, “generated source code includes one or more comments that include a block path identifying a section of the source model language that corresponds to an element in the block diagram model.” The Examiner respectfully disagrees with the Applicant. As noted above, the term “block path” has not been clearly defined in the claims and/or specification in such a way to overcome the teachings of Aptus. Aptus clearly teaches wherein the source code was parsed such that the source code was tokenized into the individual elements that make up the source code, which included “comments.” Aptus further taught that based on said tokenized source code, the source code was analyzed for informative portions such as names, comments, and parameters (column 22, line 46-column 23, line 51)(Figs. 20, 24, & 25). Based on the identifying information found within said source code, Aptus taught establishing hyperlinks between corresponding information in the created textual description and the created diagram model such that a user could more easily navigate between the two.

In regard to the independent claim 1, the Applicant also argues that neither Aptus, Dori, nor Kodosky teach or suggest, “identifying, using a report compiler, the block path in the one or more comments.” The Examiner respectfully disagrees with the Applicant. Aptus clearly teaches wherein the HTML documentation system parses “the source code and the comments in

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the source code” so that the tokenized source code could be searched for "informative portions" for appropriate hyperlinking (column 22, line 46-column 23, line 13).

In regard to the independent claim 1, the Applicant further argues that neither Aptus, Dori, nor Kodosky teach or suggest, “replacing the block path with a hypertext link that refers to the element of the block diagram model that corresponds to the section of the source model language identified by the block path.” The Examiner respectfully disagrees with the Applicant. As noted above, the term “block path” has not been clearly defined in the claims and/or specification in such a way to overcome the teachings of Aptus. Aptus clearly teaches maintaining via HTML documentation (i.e. hyperlinks) a way of navigating between both diagrammatic and textual documentation of source code. Aptus teaches hyperlinking rectangular portions/elements of the diagrammatic model with the corresponding portions of the textual documentation of the source code. Aptus taught that it was notoriously well known in the art for hyperlinks to connect an HTML image or document to another HTML image or document. Additionally, Aptus taught placing hyperlinks within the textual documentation based on the identified information portions in the tokenized source code.

In regard to the additional independent claims, Applicant's arguments are similar to those disclosed above (i.e. the reference do not teach or suggest identifying a block path in comments and replacing said block path with a hypertext link). As noted above, the Examiner contends that those elements are clearly taught by

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Please note the additionally cited prior art on the accompany PTO-892 Form.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam L. Basehoar whose telephone number is (571)-272-4121. The examiner can normally be reached on M-F: 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Hong can be reached on (571) 272-4124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Adam L Basehoar/
Primary Examiner, Art Unit 2178